

**§ 201.56-3**

(iii) Shoot system: The hypocotyl elongates and carries the cotyledons above the soil surface. The epicotyl usually does not show any development within the test period.

(iv) Root system: A long primary root with secondary roots usually developing within the test period.

(2) Abnormal seedling description.

(i) Cotyledons:

(A) Less than half of the original cotyledon tissue remaining attached.

(B) Less than half of the original cotyledon tissue free of necrosis or decay. (Remove any attached seed coats at the end of the test period for evaluation of cotyledons.)

(ii) Epicotyl:

(A) Missing. (May be assumed to be present if cotyledons are intact.)

(B) [Reserved]

(iii) Hypocotyl:

(A) Deep open cracks extending into the conducting tissue.

(B) Malformed, such as markedly shortened, curled, or thickened.

(C) Watery.

(iv) Root:

(A) None.

(B) Weak, stubby, or missing primary root with weak secondary or adventitious roots. (Seedlings with roots bound within tough seed coats should be left in the test until the final count to allow for development.)

(v) Seedling:

(A) One or more essential structures impaired as a result of decay from primary infection.

(B) Albino.

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**§ 201.56-3 Mustard family,  
Brassicaceae (Cruciferae).**

Kinds of seed: Broccoli, brussels sprouts, cabbage, Chinese cabbage, cauliflower, collards, garden cress, upland cress, water cress, kale, Chinese kale, Siberian kale, kohlrabi, mustard, pakchoi, radish, rape, rutabaga, and turnip.

(a) General description.

(1) Germination habit: Epigeal dicot.

(2) Food reserves: Cotyledons which expand and become thin, leaf-like and photosynthetic. In *Brassica*, *Sinapis*, and *Raphanus*, the cotyledons are bilobed and folded, with the outer cotyledon being larger than the inner.

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(3) Shoot system: The hypocotyl elongates and carries the cotyledons above the soil surface; the epicotyl usually does not show any development within the test period.

(4) Root system: A long primary root.

(b) Abnormal seedling description.

(1) Cotyledons:

(i) Decayed at point of attachment.

(ii) Less than half of the original cotyledon tissue remaining attached.

(iii) Less than half of the original cotyledon tissue free of necrosis or decay.

(2) Epicotyl:

(i) Missing. (May be assumed to be present if the cotyledons are intact.)

(ii) [Reserved]

(3) Hypocotyl:

(i) Deep open cracks extending into the conducting tissue.

(ii) Malformed, such as markedly shortened, curled, or thickened.

(iii) Watery.

(4) Root:

(i) Weak, stubby, or missing primary root. (Secondary roots will not compensate for a defective root.)

(ii) [Reserved]

(5) Seedling:

(i) One or more essential structures impaired as result of decay from primary infection.

(ii) Albino.

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**§ 201.56-4 Cucurbit family,  
(Cucurbitaceae).**

Kinds of seed: Citron, cucumber, West India gherkin, melon, pumpkin, squash, and watermelon.

(a) General description.

(1) Germination habit: Epigeal dicot.

(2) Food reserves: Cotyledons which are large and fleshy; they expand, become photosynthetic, and usually persist beyond the seedling stage.

(3) Shoot system: The hypocotyl elongates and the cotyledons are pulled free of the seed coat, which often adheres to a peg-like appendage at the base of the hypocotyl. The epicotyl usually does not show any development within the test period.

(4) Root system: A long primary root with numerous secondary roots.

(b) Abnormal seedling description.

(1) Cotyledons: